I have an Excel workbook named "Consolidated.xlsx" stored at:

C:\Users\rreddytv\Desktop\Learning\Consolidated.xlsx

It contains 4 sheets:

Sheet: "Input"

- Columns: Meeting Type, Frequency (Daily/Weekly/Monthly), **Meeting Type, Is Manager slots should available,** Duration (minutes).

- Cell \*\*G1\*\* = integer constraint (NPT threshold, e.g., 5).

Definition for Column

Meeting Type – Meeting Name

Frequency- Is the meeting need to occurs Daily basis, Weekly or monthly

Meeting Type – Is this meeting Group meeting or it is only Associate and Manager only

Is Manager slots should available – for this meeting Associate direct manager required or any available manager can take meeting

Duration in Minutes – Meeting duration

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## Meeting Scheduling Rules

1. \*\*Team Huddle/Group Meeting\*\*

- Group meeting, must occur within the \*\*first 1 hour of shift\_start\_time\*\*.

- For associates with the same shift\_start\_time:

\* In any 30-min interval, schedule \*\*between 50% and 60%\*\* of them.

\* Remaining associates go into the \*\*immediate next interval\*\* (still within the first hour).

- Do \*\*not\*\* schedule Team Huddles for Managers who are in “Manager\_Roster” sheet ,Huddles can take any available Manager, hence this meeting need to plot only for Associates who are in “Associate\_Roster” sheet.

2. \*\*Other Meetings or **Meeting Type is “**One to One” (all except Team Huddle)\*\*

- Meeting type is “One to One “ means Individual meetings (1 associate per slot with manager).

**Is Manager slots should available: If “Yes” means only Associate manager can take this meeting who are tagged in “TM” column in “Associate\_Roster” . If No means any available manager can take this meeting**

- Frequency rules:

\* Daily → once per day.

\* Weekly → once per week, but do \*\*not schedule more than 25% of same-shift associates\*\* on any single day

\* Monthly → once per month.

- Must not overlap with lunch1, break1, or break2 periods.

- No overlap with other meetings of the same associate who are reporting to same manager

3. \*\*Heatmap Constraints\*\*

- Only schedule meetings into intervals where \*\*Staffing status > Input!I1\*\*.

- After scheduling, recalculate \*\*NPT Count\*\* and \*\*Revised Staffing\*\*.

- Do not allow \*\*Revised Staffing < Input!I1\*\*.

- If an interval violates this, reschedule meetings to another valid interval (same day or different day & workgroup).

- If rescheduling is impossible, remove the meeting and log the reason.

Sheet 2:" Associate\_Roster"

- Columns: Date, AA Type (Start with "AA-" = Associate, Start with "TM-" = Team Manager),

Day, Workgroup, Site, shift\_start\_time, lunch1\_start, lunch1\_end,

break1\_start, break1\_end, break2\_start, break2\_end,

Working (1=working, 0=off), and other columns.

- \*\*Output requirement\*\*: For each working associate (Working=1), schedule meetings into new columns \*\*P..S\*\* (headers = meeting types from "Input" sheet).

-Meeting type is mentioned “Input” sheet For meetings other than "Team Huddle", schedule \*\*the same time/day for Associate and their Team Manager\*\*.

-“Input Sheet” column “**Is Manager slots should available”**

If this column value is “Yes” then schedule meeting to Associate and same time with reporting manager. If value is “No” then schedule any time with in the shift span where other managers are available.

Also add these List of meetings to Managers in “Manager\_Roster”

Sheet : Manager\_Roster

This same replica of “Associate\_Roster” sheet , which ever meeting are required Manager as per the “Input” Sheet these meeting need to add while adding for Associates. These counts and duration should not consider in “Schedule\_heatmap calculation

Sheet :" Schedule\_heatmap"

- Columns: Date, Day, Workgroup, Interval, Requirement, Scheduled, Staffing status (= Scheduled - Requirement).

- \*\*Output requirement\*\*: Add two new columns:

- \*\*NPT Count\*\* = (All meetings scheduled in that interval × MeetingDuration / 30).

- \*\*Revised Staffing heatmap\*\* = (Scheduled - NPT Count) - Requirement

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## Output

- Update \*\*Associate\_Roster\*\*: populate columns P..S with scheduled meeting start times.

- Update \*\*Schedule\_heatmap\*\*: add NPT Count and Revised Staffing heatmap.

- Produce a \*\*summary report\*\* in with same excel sheet :

\* Total meetings scheduled per type

\* Any unscheduled meetings (with reasons)

\* Team Huddle distribution percentages (to confirm 50–60% rule compliance)

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## Deliverable

Write a \*\*Python script\*\* using \*\*pandas + openpyxl\*\* that:

- Reads `Consolidated.xlsx`

- Applies the scheduling logic above

- Writes results into a new file:

`C:\Users\rreddytv\Desktop\Learning\Consolidated\_Scheduled.xlsx`

- Prints a summary of scheduling results in the console

Include \*\*clear comments\*\* explaining each step.

I’ve attached a sample file (`Consolidated.xlsx`) — use its structure to build the code.